To: Ferrell, Mark[Ferrell.Mark@epa.gov]; Smith, Bonnie[smith.bonnie@epa.gov]; White, Terri-A[White.Terri-A@epa.gov]; schafer, joan[schafer.joan@epa.gov]; Sternberg, David[Sternberg.David@epa.gov]; Capacasa, Jon[Capacasa.jon@epa.gov]; Arguto, William[Arguto.William@epa.gov]; saxe, jennie[saxe.jennie@epa.gov]; Rose, Kenneth[Rose.Kenneth@epa.gov]; Hodgkiss, Kathy[Hodgkiss.Kathy@epa.gov]; Burns, Francis[Burns.Fran@epa.gov]; Heston, Gerald[Heston.Gerald@epa.gov]; duteau, helen[Duteau.Helen@EPA.GOV]; Miller, Linda[miller.linda@epa.gov]; Ryan, Daniel[Ryan.Daniel@epa.gov]; D'Andrea, Michael[DANDREA.MICHAEL@EPA.GOV]; damm, thomas[Damm.Thomas@epa.gov]
From: Seneca, Roy
Sent: Thur 3/13/2014 11:36:54 AM
Subject: Rollingstone - Don't Drink the Water: West Virginia After the Chemical Spill

http://www.rollingstone.com/culture/news/dont-drink-the-water-west-virginia-after-the-chemical-spill-20140312http://www.rollingstone.com/culture/news/dont-drink-the-water-west-virginia-after-the-chemical-spill-20140312

Don't Drink the Water: West Virginia After the Chemical Spill

After a toxic disaster contaminated their water, the people of Charleston, West Virginia, are wondering if what's coming out of the taps is harmful. They're not getting any good answers

by Heather Rogers

MARCH 12, 2014

Sharon Satterfield, a grandmother of six in Charleston, West Virginia, doesn't touch the water. "It's still not all right," she says, standing in her son's modest ranch-style house, almost two months after a toxic chemical spill shut down the drinking water supply of 300,000 residents in and around the state capitol — one of the largest incidents of drinking water contamination in U.S. history. At the time, state authorities banned the use of tap water for everything except flushing toilets and fighting fires. A fifth-generation native of the Appalachian Kanawha River region (known as Chemical Valley), Satterfield has always used the water for everything. But even with the official go-ahead having been given several weeks ago, she refuses to drink it. Nor will she brush her teeth with it or shower in it; she won't run a load of laundry. She even refuses to mop the floor with the water. "It's sad," she says, her eyes tired. "All my life, with all the chemical plants, Carbide, DuPont and all the rest, we've never had a problem like this."

The Fossil Fuel Resistance

On a recent afternoon, the retired 68-year-old, who spent her working life at the local gas utility, shuffles around the kitchen in sneakers and green nurse's scrubs. She wears them because children are messy, but she looks, eerily, as though she's prepared to treat the sick. A one-gallon jug balances on the edge of the sink. The faucet, unused for weeks, is pushed to the side, away from the basin. The time is just past noon and Satterfield, whose ex-husband died from cancer six years ago, is warming a lunch of canned chicken soup and microwave macaroni and cheese for her three granddaughters, aged four, three and one. Packaged foods are now the norm in the house, as is the use of paper plates, plastic forks and disposable wipes. Before the two older girls sit down at their miniature table in the living room, Satterfield squirts antibacterial sanitizer into each pair of hands, making sure the girls rub it in. "This is how we do it now, no hand washing from the tap," she says. Back at the stove, she stoops her head to check the temperature dial on the rear burner that's heating a pot of bottled water. This is for washing the few dishes and pans she uses, like the two older girls' sippy cups. Rinsing the cups and lids almost empties the water pot, using half a gallon of what many people here call "good," that is non-local, water. A few moments later, the three-year-old, in sequined pink cowboy boots, tiptoes into the kitchen and whispers that she wants hot dogs instead of soup. Satterfield pours a quart of water into another pot to cook the wieners. She goes through a gallon of clean water before lunch is even served.

Like thousands of families in the area, the Satterfields now live virtually without running water. Life in West Virginia wasn't all that easy to begin with. It is the third poorest state in the country; almost 18 percent of its population lives below the poverty line. Many people in the spill zone are now spending a chunk of their paychecks simply to have access to clean water — a necessity so fundamental it's one that people in a developed country should expect.

Since the spill, Archie Satterfield, Sharon's son, has doled out about $400 on disposable goods and bottled water, in addition to all the extra gas he's burned driving to his sister's house in another county to do laundry, and bathe himself and his kids. One way he saves money is to replenish his drinking water at the office where he's a cleaner — one of his two jobs — which is on a different water system. There he'll refill six of the family's one-gallon jugs (he doesn't take all their empties so he won't seem greedy) as he has three times each week since the start of the water crisis.

Meet the New Green Heroes

On January 9th, 10,000 gallons of a chemical called crude methylcyclohexane methanol, or MCHM, and a significantly smaller, although unknown, amount of propylene glycol phenyl ether, or PPH, gushed from a ruptured storage tank directly into the Elk River. Owned by a company called Freedom Industries, the storage facility sits about a mile upstream from the intake for a nine-county area's drinking water supply. This water plant, belonging to West Virginia American Water (WVAW), lies at the heart of the state's most populous region.

At the time of the spill, Governor Earl Ray Tomblin, a Democrat, issued a strict do-not-use order for tap water, which lasted in some areas for 10 days. Businesses shuttered, schools closed, people mobbed grocery stores only to find empty water shelves. A mere four days after the spill,

on January 13th, Governor Tomblin and the Centers for Disease Control and Prevention began lifting the ban in phases, explaining that they had established guidelines on acceptable MCHM levels in the water, and that these had been met. But two days after that, on January 15th, the Centers for Disease Control issued a statement warning pregnant women to avoid ingesting tap water. In the same letter, in an effort to calm everyone else, the agency insisted that it "does not anticipate any adverse health effects" for the rest of the population. But "does not anticipate" feels a long way from "safe." Sharon Satterfield and her family, like many of the region's residents—who are not the type to be skittish about chemicals — don't believe official assurances that the water is clean. Sitting in a recliner in his living room, Archie, who's 44, well groomed and wears a spotless white t-shirt, says he doesn't trust the water. "We don't know if it's going affect us in five years, or ten years, or even next week."

This stance is perfectly understandable given that Governor Tomblin and Jeff McIntyre, president of WVAW, have yet to definitively state that the water is safe. Instead they have variously described it as "appropriate" and "usable for all purposes." At a hearing in Charleston on February 10th, when pressed to unambiguously confirm the water's safety, Letitia Tierney, Commissioner of the state Bureau for Public Health, responded, hardly reassuringly, "That's, in a way, a difficult thing to say because everybody has a different definition of safe." Apparently the West Virginia leaders handling the crisis also believe that everyone has a different definition of what's right and what's sane. Tierney's equivocation echoed the governor's hedge on the safety question at an earlier press conference. Instead of providing clear information, Tomblin dumped responsibility on the individual. "I'm not going to say absolutely, 100 percent, that everything is safe," he said. "It's your decision."

So decide is what hundreds of thousands of people on the Elk River water supply must now do, leading to a distinct sense of unease in a valley where hardship is no stranger. A 2013 Gallup-Healthways survey found West Virginia to have the lowest state of wellbeing in the country — for the fifth straight year. According to the study, state residents had the country's highest rates of cholesterol and blood pressure, and its second highest rate of obesity. Their emotional health is also suffering: residents of no other state had as negative an outlook on the future. And now, with the MCHM spill, those living in Chemical Valley have sustained another blow.

In Charleston things appear normal — businesses are open, the National Guard is gone, the tanker trucks of clean water are no longer idling in strip-mall parking lots — but scratch the surface and it's clear that the emergency is not over. Behind the counter at a café sit two five-gallon tanks of bottled water hooked up to the coffee machines. At a local eatery, when I order a soda, the bartender explains that it comes from the tap. "Are you sure you don't just want bottled water?" he asks. Grocery stores still can't keep their water shelves stocked. Talk to people on the street and you're told that no one drinks from the tap. Some people bathe in it, others use it to wash their clothes, but almost no one trusts it.

Laying off tap water is not easy. The difficulties of living without running water in a life organized around easy access to it are countless. Take Sharon Satterfield's family, for example. There are little things, like when Archie's ex-wife, Crystal Good, a 39-year-old Charleston native, wants to make sweet tea, but remembers she disconnected her icemaker and hasn't yet bought ice trays to fill with H2O from elsewhere. Or when she wants to wash her hands with

warm water but instead uses the unheated bottle by the bathroom sink to be safe. Then there are bigger inconveniences like needing to drive to a friend's house 30 miles away to wash your clothes and take a shower. And there is the constant, nagging worry about the long-term effects on the health of her and Archie's three sons. Good frets over the possibility that their skin could absorb MCHM, and that its fumes could enter their lungs. She worries they won't feel safe in their own home.

Crystal and Archie's son Myles, 18, explains that, "When you go in the kitchen or bathroom, the whole room feels different. I can't turn that water on. I can't use that sink," he says, having arrived at Archie's house after school. "Washing up all the time with bottled water is hard. It wears on you," Myles says.

All of the inconvenience, doubt, and fear add up to a stress that pulls the late winter days taught. "The spill has changed everything you do," notes Kim Good, Crystal's mother. She has stopped by her daughter's apartment, across town from Archie's place, on her way to the recycling center. The back of her SUV is loaded with translucent one-gallon jugs and a bright blue five-gallon drum. Later she'll head to a friend's house to refill the jugs she keeps. The drive takes an hour, round-trip. "You'd think it sounds easy — just use bottled water," she explains. "It's not. You have to figure out *how* you're going to do it. You have to plan and organize and then do your daily cleaning and cooking and everything else in this totally different way."

Although they're uneasy about it, Crystal's family has been going back to the tap. The convenience and low cost are too tempting. Her two oldest sons, Myles and Nickolas, are showering, as is Archie, who she shares custody with. Her mother and father are showering as well. So is Crystal. Bathing from the bottle is the most inconvenient aspect of being off the tap. "You can't get really clean," Crystal says. But her youngest son, Aiden, who's 10, resists using tap water. When his parents suggested he try taking a shower in it, the boy broke down sobbing. He said he didn't want to be in "chemical water."

Many other people are still wary of tap water. Randy Barrett is the mayor of Winfield, a small town in the affected area about twenty miles west of Charleston. Although he has started showering, he won't allow his grandchildren to use it. He doesn't want them to sit in a warm bath of tap water, even though one recent day it took him, his wife and their daughter over an hour to wash three young kids with bottled water heated on the stove. "I'm still not in a position to tell my daughter it's safe to give the water to her babies," he says. Breaking ranks with other government officials, Barrett flatly rejects that the water is okay and mistrusts the politicians and water company executives who say it is. "I don't believe it's too much to ask to have safe water," he says.

Rebecca Roth doesn't want to take any chances either. She is a part-time grant writer for the West Virginia Symphony Orchestra who lives in Charleston with her husband and two year old daughter, Lucy. Sitting in the children's section of the public library, she thumbs through a book with Lucy, pointing out the puppies and kittens. "I certainly want things to be back the way they were before," she says. "But they're not." The only thing she'll use tap water for is the dishwasher. "I would rather hear later that I was overly cautious," the 39-year-old says.

To bathe, Roth uses a portable camp shower. The device is a thick plastic five-gallon bag that hangs from a showerhead and is connected to a tube, at the end of which is a spout. Showering this way is time consuming; it takes Roth 30 minutes to prepare a five-minute shower. The routine involves Roth warming a pot of bottled water in the kitchen, lugging it upstairs to the apartment's only bathroom, filling the bag, and then heading back downstairs to heat another pot full.

What really exhausts Roth, though, more than lost time and inconvenience, are her fears about the long-term health impacts of MCHM, and not just for her — she is four months pregnant. "We don't know what the effects will be in 20 years on Lucy and her potential sibling," Roth says, her eyes wide. "What will happen when they try to start their own families? Will they find out then that they have reproductive problems?"

No one, not even the country's top chemical experts, know the answer to that question. People exposed to the tainted water know MCHM's immediate effects: nausea, vomiting, headaches, and eye, skin and lung irritation. But the chemical is one of about 62,000 that have never been thoroughly tested for toxicity in humans. MCHM, concocted by the Eastman Chemical Company, is used to wash impurities from coal to enhance its combustibility. The few existing studies of MCHM were performed in the 1990s by the chemical's manufacturer, and were never peer reviewed. Among Eastman's research was an experiment on the lethality of MCHM in adult rats — but that information can't readily be extrapolated to understand the effects on the people of Chemical Valley. None of Eastman's inquiries considered health effects in children, or at lower levels of exposure and over time, including MCHM's carcinogenic properties and potential to damage human reproductive systems. Consequently, residents don't believe the water is safe because no one can tell them how and to what extent it is unsafe.

To mitigate their fears about the tap water, people have little choice but to devise their own rationales for its usage. These rules aren't based on science, but on perceptions and feelings — or, put another way, on superstitions, developed on the fly. Sharon Satterfield says she'll use the water in a year's time — based on her gut instinct, it will be safe by then. Archie has decided it's okay to start showering, but only if he keeps it to five minutes (a little longer if he has to shave). "I don't know what it's doing inside my body," Satterfield says. "But my skin doesn't have a rash, so that's what I'm going on right now." Similarly, to minimize her possible exposure to MCHM, Crystal takes a fraction of the showers she used to.

Because the MCHM leak has stopped, and since his hair isn't falling out, Crystal's father, Wesley Armstead, 59, considers the water "safe enough." Although he won't drink it, he believes that the MCHM has dispersed sufficiently that the water is no longer dangerous. Armstead, who does assignment direction at the local Fox television affiliate, WCHS, sees what he's doing as brave. "You've got to come out of the crisis some way. We've got to trust our water," he says. He admits his faith is not rooted in facts. "It's guesswork," he says. "But what are we to do?"

That sort of sentiment is what's pushing a lot of people to begin using the water again — they want their lives back. But Crystal's mom Kim is worried that people are going back to the tap not because anyone has proven that the water is clean, but because people can no longer manage the extra work and strain. In this way, she says, the disaster appears to be moving from the public

sphere into the private one, the poisoned water seeping from muddy riverbanks into frazzled minds. Crystal also sees this dynamic, and likens the situation to a war of attrition: "The politicians are just waiting it out," she says. "We'll have to start using the water at some point." She's right about that. The future here is one where people turn on the taps, bathe and drink, unsure if the thing that gives them life is also leeching it away.

As the weeks pass, the West Virginia water crisis becomes less publicly visible. Governor Tomblin lifted the state of emergency at the start of March, ending the supply of free water. Public schools have uncovered their drinking fountains and stopped offering bottled water to students. Pregnant women have been told by the Centers for Disease Control it is okay to drink the water. Most of the signs informing customers that this restaurant or that hotel uses bottled water have been taken down. Many restaurants are back to using tap water for cooking and washing. The national media attention has waned. Even the company responsible for poisoning the drinking water, Freedom Industries, is disappearing. Having filed for Chapter 11 bankruptcy in January, Freedom will be able to limit its potential payouts to the people affected by the spill. The site of the leak will also disappear — the state has ordered the company to demolish its storage facility. In late February, the CDC released a statement that at last used the word "safe" to describe the water. But it did this even though there have been no new studies on the health affects of MCHM. (It seems that governments, too, engage in magical thinking.) Rather than life actually returning to normal, it seems that many local, state and national authorities are set on creating conditions meant to *seem* normal, which, in its own sad way, is almost as troubling as the 10,000 gallons of chemicals that poured into the Elk River.

http://www.rollingstone.com/culture/news/dont-drink-the-water-west-virginia-after-the-chemical-spill-20140312